

## WHAT IS CLAIMED IS:

## 1. An optical head device comprising:

an objective lens for bringing light emitted from a light source into focus on an information recording medium;

5           a lens holder for holding said objective lens, said lens holder having a bearing hole formed along a direction parallel to an optical axis of said objective lens;

a support shaft inserted in said bearing hole;

a light detector for receiving said light reflected from said information recording medium and outputting information about inclination of said objective lens  
10 relative to said information recording medium on the basis of said light received; and

an inclination drive unit for, according to said information about said inclination, turning said lens holder on a first axis perpendicular to said support shaft.

## 2. The optical head device according to claim 1, wherein

15           said bearing hole has a hole diameter that increases as it approaches openings of said bearing hole from the center of said bearing hole, and

said bearing hole has a wall that is generally circularly arcuate in cross-sectional shape.

## 3. The optical head device according to claim 2, wherein

20           an equation  $(A - B) = L \times \tan \theta$  is generally satisfied, where A is a hole diameter of said bearing hole in the vicinity of said opening, B is a hole diameter of said bearing hole in the vicinity of said center, L is a length of said bearing hole along said optical axis of said objective lens, and  $\theta$  is a maximum amount of correction on the  
25 turning of said lens holder.

4. The optical head device according to claim 3, wherein  
said (A-B) equals approximately to  $88\ \mu\text{m}$  and said L equals approximately to  
5 mm.

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5. The optical head device according to claim 1, wherein  
said inclination drive unit includes:

electromagnetic drive means comprising a first element mounted on said lens  
holder on a second axis perpendicular to both said support shaft and said first axis  
10 perpendicular to said support shaft, and a second element located opposite said first  
element; and

a magnetic material fixedly mounted on said lens holder in close vicinity to said  
second element of said electromagnetic drive means.

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6. The optical head device according to claim 1, further comprising:  
a fluid provided in said bearing hole.

7. The optical head device according to claim 6, wherein  
said fluid includes a magnetic fluid.

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8. The optical head device according to claim 7, wherein  
said lens holder further includes a permanent magnet located opposite said  
bearing hole and said magnetic fluid.

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9. An optical head device comprising:

an objective lens for bringing light emitted from a light source into focus on an information recording medium;

a lens holder for holding said objective lens, said lens holder having a bearing hole formed along a direction parallel to an optical axis of said objective lens;

5 a support shaft inserted in said bearing hole; and

a fluid provided in said bearing hole.

10. The optical head device according to claim 9, wherein

said fluid includes a magnetic fluid.

11. The optical head device according to claim 10, wherein

said lens holder further includes a permanent magnet located opposite said bearing hole and said magnetic fluid.